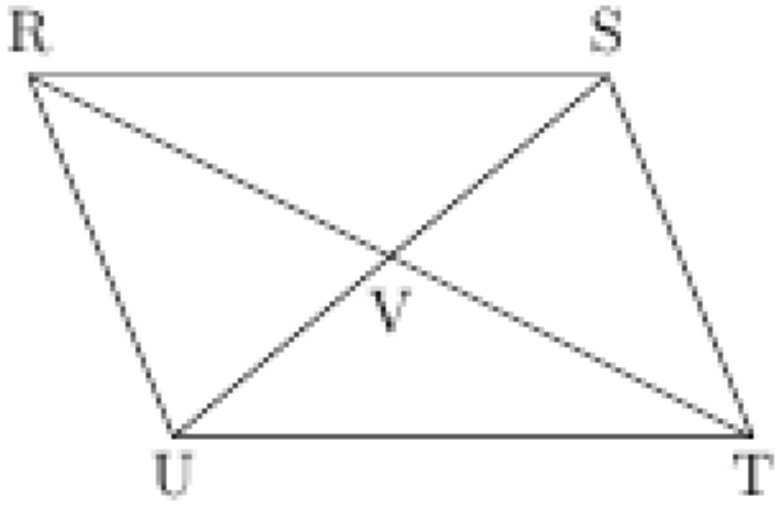
Topic: Measures of quadrilaterals

Question: Find the perimeter.

In parallelogram $RSTU$, $RT = 11$, $US = 8$, and $RU = 5.5$. What is the perimeter of ΔSTV ?



Answer choices:

A 11

B 15

C 19

D 24.5

© Krista King Math

Solution: B

The diagonals of a parallelogram bisect each other, so we can say

$$VT = \left(\frac{1}{2}\right) RT = \left(\frac{1}{2}\right) 11 = 5.5$$

Likewise,

$$VS = \left(\frac{1}{2}\right) US = \left(\frac{1}{2}\right) 8 = 4$$

Opposite sides of a parallelogram are congruent, so

$$ST = RU = 5.5$$

Therefore, the perimeter of the triangle is

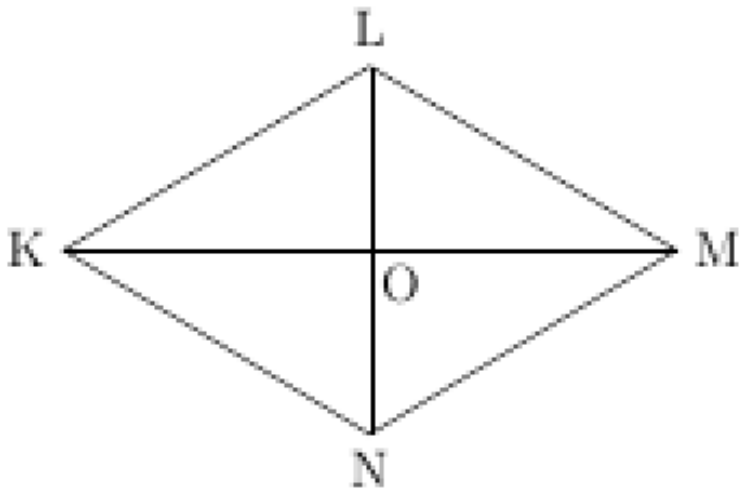
$$\Delta STV = 5.5 + 4 + 5.5 = 15$$

© Krista King Math

Topic: Measures of quadrilaterals

Question: Find the perimeter.

In rhombus $KLMN$, $LN = 9$ and $MO = 6$. What is the perimeter of $KLMN$?



Answer choices:

A 24

B 26

C 28

D 30

© Krista King Math

Solution: D

The diagonals of a rhombus are perpendicular bisectors of each other, so

$$LO = \left(\frac{1}{2}\right) LN = \left(\frac{1}{2}\right) 9 = 4.5$$

And $m\angle LOM = 90°$. Since ΔLOM is a right triangle, so we can use the Pythagorean Theorem:

$$4.5^2 + 6^2 = (LM)^2$$

$$20.25 + 36 = (LM)^2$$

$$56.25 = (LM)^2$$

$$7.5 = LM$$

All sides of a rhombus are congruent, so the perimeter of $KLMN$ is

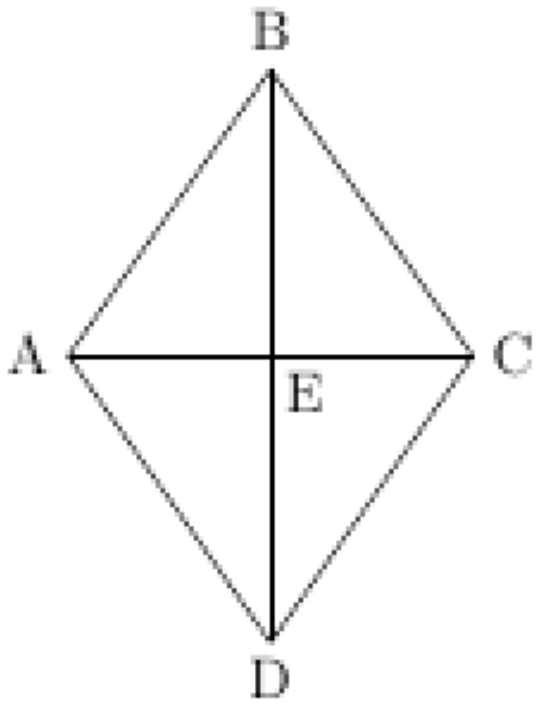
$$4(7.5) = 30$$

© Krista King Math

Topic: Measures of quadrilaterals

Question: Find the length of the line segment.

In rhombus $ABCD$, $BC = 6$ and $\angle BCE = 60°$. What is AC?



Answer choices:

A 4

B 5

C 6

D 7

© Krista King Math

Solution: C

The diagonals of a rhombus are perpendicular to each other, so

$$m\angle BEC = 90^\circ$$

Also, since $\angle BCE = 60^\circ$, that makes ΔBEC is a 30-60-90 triangle. In a 30-60-90 triangle the ratio of the short leg to the hypotenuse is 1:2. The hypotenuse, $\overline{BC}$, is given to be 6, so the measure of the short leg, $\overline{EC}$, must be 3.

The diagonals of a rhombus bisect each other, so if $EC = 3$, then $AC = 6$.

© Krista King Math